

REMARKS/ARGUMENTS

Claims 1-35 are pending and stand substantively rejected. In this Amendment, claims 1, 15, 19, 20, 25, 29 and 33 are amended, claims 6 and 16 are canceled, and new claims 36 and 37 are added. Reconsideration of the claims is respectfully requested. The paragraph numbering below follows that of the Office Action.

Claims

Claims 1 and 15 are amended to incorporate elements from canceled claims 6 and 16, respectively. Claims 19, 29 and 33 are amended to also include tilt correction elements, and new claims 36 and 37 include tilt correction elements, as well. Support for tilt correction can be found in the specification at, for example, paragraphs [0101]-[0103] and [133]-[135]. No new matter is introduced.

Drawings

¶1. The drawings were objected to because Figs. 9-11 were alleged to be of poor quality. Applicants submit herewith a set of high quality Formal Drawings sheets. Each sheet is labeled as a “Replacement Sheet.” Withdrawal of this objection is respectfully requested.

Claim Objections

¶2. Claim 19 was objected to for allegedly lacking antecedent basis for “the correction ablation pattern.” Claim 19 is amended to replace the term “the correction ablation pattern” with the term “laser ablation treatment table,” which has antecedent basis in claim 18. Withdrawal of this objection is respectfully requested.

¶3. Claim 25 was objected to for allegedly failing to further limit the subject matter of a previous claim. Claim 25 is amended to positively claim the system of claim 24. Withdrawal of this objection is respectfully requested.

Rejections Under 35 U.S.C. § 102/103

¶6. Claims 1-5, 7-10, 13-15, 17-26 and 29-35 were rejected under 35 U.S.C. § 102(b) as allegedly anticipated by or, in the alternative, under 35 U.S.C. § 103(a) as allegedly obvious over U.S. Publication No. 2001/0041884 to Frey et al. ("Frey"). This rejection is overcome as follows.

Presently pending independent claim 1 is amended to incorporate the elements of dependent claim 6, which is novel and nonobvious over Frey. Presently pending independent claim 15 is amended to incorporate the elements of dependent claim 16, which is novel and nonobvious over Frey. Presently pending independent claims 20, 29 and 33 are amended to recite similar elements.

Claims 2-5, 7-10, 13 and 14 depend directly or indirectly from amended claim 1, claims 17-19 depend directly or indirectly from amended claim 15, claims 21-26 depend directly or indirectly from amended claim 20, claims 30-32 depend directly or indirectly from amended claim 29, and claims 34 and 35 depend directly or indirectly from amended claim 33. Each of these dependent claims are, therefore, allowable as depending from an allowable base claim, as well as for the novel and nonobvious combination of elements they recite. Withdrawal of this rejection is respectfully requested.

First Rejection Under 35 U.S.C. § 103

¶7. Claims 6 and 16 were rejected under 35 U.S.C. § 103(a) as allegedly obvious over Frey in view of U.S. Patent No. 5,745,309 to Salmon ("Salmon"). Although claims 6 and 16 are presently canceled, elements from those claims are now incorporated into amended independent claims 1 and 15, respectively. For the sake of compact prosecution, the substance of this rejection is addressed below.

Applicants respectfully submit that neither reference alone, nor any reasonable combination thereof, teaches or suggests the adjustment or correction of a Fourier reconstruction

so as to correct for tilt in a wavefront reconstruction. A myriad of references describe wavefront reconstructions (typically using Zernike polynomials) without addressing the subtle tilt compensation issue that arises in Fourier reconstructions. As the record is void of any reference suggesting that such tilt is an issue when seeking optimal accuracy in Fourier wavefront reconstructions, and as Applicants appear (per the current record) to be the first to recognize and address this subtle source of potential error in optical calculations (that will often be used for diagnosing and altering the refraction of patient's eyes), Applicants submit that they are entitled to allowance of the claims. Moreover, according to MPEP 2143, to establish a *prima facie* case of obviousness, among other things, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to the artisan, to combine the references. The proposed combination of Frey and Salmon fails to meet this test.

Amended independent claims 1 and 15 are drawn to transform methods for optical tissues that include, among other things, adding a mean gradient field to compensate for tilt.

The instant specification teaches that in Fourier reconstruction methods, it may be desirable to correct a tilt in a reconstructed surface (see, e.g., paragraphs [0101] and [0133]-[0135]). Frey discusses approximating a distorted wavefront using a Fourier series but, as noted in the Office Action at page 4, Frey fails to disclose adding a mean gradient field to remove a tilt from the reconstructed phase. Salmon discusses adaptive optic control systems, but fails to teach or suggest a Fourier reconstruction technique, nor that tilt could be an issue in such a Fourier reconstruction. In fact, the actual text of column 5 of Salmon that is cited in the Office Action does not address reconstruction of any kind and is, instead, directed to control signals that are to be sent to a flexible mirror.

Applicants submit that neither Frey nor Salmon provide the requisite motivation to combine the references. There is no teaching or suggestion in Frey of problems associated with tilt in a Fourier reconstruction. Further, there is no teaching or suggestion in Salmon that the tilt control techniques could be used with techniques such as Fourier-based reconstruction.

The Office Action, at page 4, alleges that the artisan would have been motivated to combine the references “in order to remove an average tilt from the surface.” Applicants submit that it is improper to rely on such conclusory statements as a basis for obviousness. The Office Action has not established *why* the artisan would be motivated to remove tilt from Fourier reconstruction surface. Some objective reason to combine the references, based on evidentiary support, must be provided.

As noted in MPEP 2142, the tendency to resort to hindsight reasoning is often difficult to avoid due to the nature of the examination process, but such reasoning must be avoided. Obviousness must be reached on the facts gleaned from the cited references alone, without the benefit of the Applicants disclosure. Applicants emphasize that to reach a proper determination under 35 U.S.C. § 103, one must step backward in time and into the shoes worn by the hypothetical “person of ordinary skill in the art” when the invention was unknown and just before it was made. Knowledge of Applicants’ disclosure must be put aside in reaching this determination. The legal conclusion of obviousness must be reached on the basis of facts gleaned from the cited references. Withdrawal of this rejection is respectfully requested.

Amended independent claims 20, 29 and 33 are allowable over the cited references for at least the reasons set forth above.

Second Rejection Under 35 U.S.C. § 103

¶8. Claims 11 and 12 were rejected under 35 U.S.C. § 103(a) as allegedly obvious over Frey in view of Roddier et al., Applied Optics 30(11):1325-1327 (1991). This rejection is moot in view of the amendment to claim 1.

Claims 11 and 12 depend from amended independent claim 1. As discussed above in ¶7, amended claim 1 is nonobvious over the cited references. Thus, presently pending claims 11 and 12 are allowable as depending from an allowable base claim, as well as for the nonobvious combination of elements they recite. Withdrawal of this rejection is respectfully requested.

Third Rejection Under 35 U.S.C. § 103

¶9. Claims 27 and 28 were rejected under 35 U.S.C. § 103(a) as allegedly obvious over Frey in view of U.S. Patent No. 5,777,719 to Williams et al. ("Williams"). This rejection is moot in view of the amendment to claim 20.

Claims 27 and 28 depend directly or indirectly from amended independent claim 20. For many of the reasons discussed above in ¶7 with regard to amended claim 1, Applicants submit that amended claim 20 is also nonobvious over the cited references. Thus, presently pending claims 27 and 28 are allowable as depending from an allowable base claim, as well as for the nonobvious combination of elements they recite. Withdrawal of this rejection is respectfully requested.

Conclusion

In view of the foregoing, Applicants believe all claims now pending in this application are in condition for allowance. The issuance of a formal Notice of Allowance at an early date is respectfully requested.

If the Examiner believes a telephone conference would expedite prosecution of this application, please telephone the undersigned at 303-571-4000.

Respectfully submitted,



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Attachments - Drawing Replacement Sheets 1-9

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